

**CRF Errors Corrected by the STIC Systems Branch**

CR 114

**Serial Number:** 08/113, 561

CRF Processing Date: 9/7/93  
 Edited by: [Signature]  
 Verified by: MAA (STIC staff)

- ☒ Changed a file from non-ASCII to ASCII
- ☒ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: ENTERED
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other \_\_\_\_\_.
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: \_\_\_\_\_
- ☐ Inserted a space between the last nucleic designator and the nucleic number for sequences: \_\_\_\_\_
- ☐ Deleted page numbers in the text of the sequence listing, which is considered invalid text.
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: \_\_\_\_\_
- ☐ Inserted a nucleic number at the end of a nucleic line. SEQ ID NO's edited: \_\_\_\_\_
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: \_\_\_\_\_
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: \_\_\_\_\_
- ☐ Deleted non-ASCII "garbage" at the end of files, and other invalid text, such as a secretary's initials.
- ☐ Inserted mandatory headings, specifically: \_\_\_\_\_
- ☐ Corrected an obvious error in the response, specifically: \_\_\_\_\_
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: \_\_\_\_\_
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Other: \_\_\_\_\_

**\*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.**

8/01/93

RAW SEQUENCE LISTING  
PATENT APPLICATION US/08/113,561DATE: 09/07/93  
TIME: 15:21:27

INPUT SET: S1444.raw

ENTERED

## SEQUENCE LISTING

## (1) General Information:

(i) APPLICANTS: Adams, Thomas R. et al.

(ii) TITLE OF INVENTION: Methods and Compositions for the  
Production of Stably Transformed, Fertile, Monocot Plants  
and Cells Thereof

(iii) NUMBER OF SEQUENCES: 13

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Arnold, White &amp; Durkee

(B) STREET: P.O. BOX 4433

(C) CITY: Houston

(D) STATE: TX

(E) COUNTRY: USA

(F) ZIP: 77210

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk

(B) COMPUTER: IBM PC compatible

(C) OPERATING SYSTEM: PC-DOS/MS-DOS

(D) SOFTWARE: Patent In Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: unknown

(B) FILING DATE: August 25, 1993

(C) CLASSIFICATION: unknown

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Parker, David L.

(B) REGISTRATION NUMBER: 32,165

(C) REFERENCE/DOCKET NUMBER: DEKA:055/PAR

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 512-320-7200

(B) TELEFAX: 512-474-7577

(C) TELEX: NOT APPLICABLE

## (2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 amino acid residues

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

RAW SEQUENCE LISTING  
PATENT APPLICATION US/08/113,561DATE: 09/07/93  
TIME: 15:21:28

INPUT SET: S1444.raw

52  
53 Met Ala Thr Val Pro Glu Leu Asn Cys Glu Met Pro Pro Ser Asp  
54 1 5 10 15  
55  
56  
57 (2) INFORMATION FOR SEQ ID NO:2:  
58  
59 (i) SEQUENCE CHARACTERISTICS:  
60 (A) LENGTH: 35 base pairs  
61 (B) TYPE: nucleic acid  
62 (C) STRANDEDNESS: single  
63 (D) TOPOLOGY: linear  
64  
65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:  
66  
67 GAGGATCCGT CGACATGGTA AGCTTAGCGG GCCCC 35  
68  
69  
70 (2) INFORMATION FOR SEQ ID NO:3:  
71  
72 (i) SEQUENCE CHARACTERISTICS:  
73 (A) LENGTH: 29 base pairs  
74 (B) TYPE: nucleic acid  
75 (C) STRANDEDNESS: single  
76 (D) TOPOLOGY: linear  
77  
78 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:  
79  
80 GATCCGTCGA CCATGGCGCT TCAAGCTTC 29  
81  
82  
83 (2) INFORMATION FOR SEQ ID NO:4:  
84  
85 (i) SEQUENCE CHARACTERISTICS:  
86 (A) LENGTH: 29 base pairs  
87 (B) TYPE: nucleic acid  
88 (C) STRANDEDNESS: single  
89 (D) TOPOLOGY: linear  
90  
91 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:  
92  
93 GCAGCTGGTA CCGCGAAGTT CGAAGGGCT 29  
94  
95  
96  
97 (2) INFORMATION FOR SEQ ID NO:5:  
98  
99 (i) SEQUENCE CHARACTERISTICS:  
100 (A) LENGTH: 49 base pairs  
101 (B) TYPE: nucleic acid  
102 (C) STRANDEDNESS: single

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103 (D) TOPOLOGY: linear  
104  
105 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:  
106  
107 CTAGACAACA AAGCAGCAAC CATGGCCAGC ATGCAAGGCC TCATGCATC 49  
108  
109  
110 (2) INFORMATION FOR SEQ ID NO:6:  
111  
112 (i) SEQUENCE CHARACTERISTICS:  
113 (A) LENGTH: 49 base pairs  
114 (B) TYPE: nucleic acid  
115 (C) STRANDEDNESS: single  
116 (D) TOPOLOGY: linear  
117  
118 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:  
119  
120 CCGGGATGCA TGAGGCCTTG CATGCTGGCC ATGGTTGCTG CTTTGTTGT 49  
121  
122  
123  
124 (2) INFORMATION FOR SEQ ID NO:7:  
125  
126 (i) SEQUENCE CHARACTERISTICS:  
127 (A) LENGTH: 11 amino acid residues  
128 (B) TYPE: amino acid  
129 (C) STRANDEDNESS: single  
130 (D) TOPOLOGY: linear  
131  
132 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:  
133  
134 Met Ala Ser Met Gln Gly Leu Met His Pro Gly  
135 1 5 10  
136  
137  
138 (2) INFORMATION FOR SEQ ID NO:8:  
139  
140 (i) SEQUENCE CHARACTERISTICS:  
141 (A) LENGTH: 6 amino acid residues  
142 (B) TYPE: amino acid  
143 (C) STRANDEDNESS: single  
144 (D) TOPOLOGY: linear  
145  
146 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:  
147  
148 Val Lys Cys Met Gln Val  
149 1 5  
150  
151  
152 (2) INFORMATION FOR SEQ ID NO:9:  
153

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:21:31

INPUT SET: S1444.raw

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154      (i) SEQUENCE CHARACTERISTICS:
155          (A) LENGTH: 18 base pairs
156          (B) TYPE: nucleic acid
157          (C) STRANDEDNESS: single
158          (D) TOPOLOGY: linear
159
160      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
161
162      AAGUGAAGUG AAGUGAAG      18
163
164
165
166      (2) INFORMATION FOR SEQ ID NO:10:
167
168          (i) SEQUENCE CHARACTERISTICS:
169              (A) LENGTH: 1845 base pairs
170              (B) TYPE: nucleic acid
171              (C) STRANDEDNESS: single
172              (D) TOPOLOGY: linear
173
174          (ii) MOLECULE TYPE: DNA (genomic)
175
176          (ix) FEATURE:
177              (A) NAME/KEY: CDS
178              (B) LOCATION: 1..1839
179
180          (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
181
182      ATG GAT AAC AAT CCG AAC ATC AAT GAA TGC ATT CCT TAC AAT TGC CTC      48
183      Met Asp Asn Asn Pro Asn Ile Asn Glu Cys Ile Pro Tyr Asn Cys Leu
184          1              5              10              15
185
186      AGC AAC CCT GAA GTG GAA GTG CTG GGT GGC GAA CGC ATC GAA ACC GGT      96
187      Ser Asn Pro Glu Val Glu Val Leu Gly Gly Glu Arg Ile Glu Thr Gly
188              20              25              30
189
190      TAC ACC CCA ATC GAT ATT TCC CTG TCC CTG ACC CAA TTT CTG CTG AGC      144
191      Tyr Thr Pro Ile Asp Ile Ser Leu Ser Leu Thr Gln Phe Leu Leu Ser
192              35              40              45
193
194      GAA TTT GTG CCC GGT GCT GGC TTT GTG CTG GGC CTG GTG GAT ATC ATC      192
195      Glu Phe Val Pro Gly Ala Gly Phe Val Leu Gly Leu Val Asp Ile Ile
196          50              55              60
197
198      TGG GGC ATT TTT GGT CCC TCC CAA TGG GAC GCC TTT CTG GTG CAA ATT      240
199      Trp Gly Ile Phe Gly Pro Ser Gln Trp Asp Ala Phe Leu Val Gln Ile
200          65              70              75              80
201
202      GAA CAG CTG ATT AAC CAA CGC ATC GAA GAA TTC GCT AGG AAC CAA GCC      288
203      Glu Gln Leu Ile Asn Gln Arg Ile Glu Glu Phe Ala Arg Asn Gln Ala
204              85              90              95

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# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

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INPUT SET: S1444.raw

205																	
206	ATT	TCC	CGC	CTG	GAA	GGC	CTG	AGC	AAT	CTG	TAC	CAA	ATT	TAC	GCC	GAA	336
207	Ile	Ser	Arg	Leu	Glu	Gly	Leu	Ser	Asn	Leu	Tyr	Gln	Ile	Tyr	Ala	Glu	
208				100					105					110			
209																	
210	TCC	TTT	CGC	GAG	TGG	GAA	GCC	GAT	CCT	ACC	AAT	CCA	GCC	CTG	CGC	GAA	384
211	Ser	Phe	Arg	Glu	Trp	Glu	Ala	Asp	Pro	Thr	Asn	Pro	Ala	Leu	Arg	Glu	
212			115					120					125				
213																	
214	GAG	ATG	CGC	ATT	CAA	TTC	AAT	GAC	ATG	AAC	AGC	GCC	CTG	ACC	ACC	GCT	432
215	Glu	Met	Arg	Ile	Gln	Phe	Asn	Asp	Met	Asn	Ser	Ala	Leu	Thr	Thr	Ala	
216		130					135					140					
217																	
218	ATT	CCT	CTG	TTT	GCC	GTG	CAA	AAT	TAC	CAA	GTG	CCT	CTG	CTG	TCC	GTG	480
219	Ile	Pro	Leu	Phe	Ala	Val	Gln	Asn	Tyr	Gln	Val	Pro	Leu	Leu	Ser	Val	
220	145					150					155					160	
221																	
222	TAC	GTG	CAA	GCT	GCC	AAT	CTG	CAT	CTG	TCC	GTG	CTG	CGC	GAT	GTG	TCC	528
223	Tyr	Val	Gln	Ala	Ala	Asn	Leu	His	Leu	Ser	Val	Leu	Arg	Asp	Val	Ser	
224				165						170					175		
225																	
226	GTG	TTT	GGC	CAA	AGG	TGG	GGC	TTT	GAT	GCC	GCC	ACC	ATC	AAT	AGC	CGC	576
227	Val	Phe	Gly	Gln	Arg	Trp	Gly	Phe	Asp	Ala	Ala	Thr	Ile	Asn	Ser	Arg	
228			180						185					190			
229																	
230	TAC	AAT	GAT	CTG	ACC	AGG	CTG	ATT	GGC	AAC	TAC	ACC	GAT	TAC	GCT	GTG	624
231	Tyr	Asn	Asp	Leu	Thr	Arg	Leu	Ile	Gly	Asn	Tyr	Thr	Asp	Tyr	Ala	Val	
232			195					200					205				
233																	
234	CGC	TGG	TAC	AAT	ACC	GGC	CTG	GAA	CGC	GTG	TGG	GGC	CCA	GAT	TCC	CGC	672
235	Arg	Trp	Tyr	Asn	Thr	Gly	Leu	Glu	Arg	Val	Trp	Gly	Pro	Asp	Ser	Arg	
236		210					215					220					
237																	
238	GAT	TGG	GTG	AGG	TAC	AAT	CAA	TTT	CGC	CGC	GAA	CTG	ACC	CTG	ACC	GTG	720
239	Asp	Trp	Val	Arg	Tyr	Asn	Gln	Phe	Arg	Arg	Glu	Leu	Thr	Leu	Thr	Val	
240	225					230					235					240	
241																	
242	CTC	GAT	ATC	GTG	GCT	CTG	TTC	CCA	AAT	TAC	GAT	AGC	CGC	CGC	TAC	CCA	768
243	Leu	Asp	Ile	Val	Ala	Leu	Phe	Pro	Asn	Tyr	Asp	Ser	Arg	Arg	Tyr	Pro	
244				245						250					255		
245																	
246	ATT	CGA	ACC	GTG	TCC	CAA	CTG	ACC	CGC	GAA	ATT	TAC	ACC	AAC	CCA	GTG	816
247	Ile	Arg	Thr	Val	Ser	Gln	Leu	Thr	Arg	Glu	Ile	Tyr	Thr	Asn	Pro	Val	
248			260						265					270			
249																	
250	CTG	GAA	AAT	TTT	GAT	GGT	AGC	TTT	CGC	GGC	TCC	GCT	CAG	GGC	ATC	GAA	864
251	Leu	Glu	Asn	Phe	Asp	Gly	Ser	Phe	Arg	Gly	Ser	Ala	Gln	Gly	Ile	Glu	
252			275					280					285				
253																	
254	CGC	AGC	ATT	AGG	AGC	CCA	CAT	CTG	ATG	GAT	ATC	CTG	AAC	AGC	ATC	ACC	912
255	Arg	Ser	Ile	Arg	Ser	Pro	His	Leu	Met	Asp	Ile	Leu	Asn	Ser	Ile	Thr	

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

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TIME: 15:21:34

INPUT SET: S1444.raw

256	290	295	300	
257				
258	ATC TAC ACC GAT GCT CAT AGG GGT TAC TAC TAC TGG TCC GGC CAT CAA	960		
259	Ile Tyr Thr Asp Ala His Arg Gly Tyr Tyr Tyr Trp Ser Gly His Gln			
260	305 310 315 320			
261				
262	ATC ATG GCT TCC CCT GTG GGC TTT TCC GGG CCA GAA TTC ACC TTT CCA	1008		
263	Ile Met Ala Ser Pro Val Gly Phe Ser Gly Pro Glu Phe Thr Phe Pro			
264	325 330 335			
265				
266	CTG TAC GGC ACG ATG GGC AAT GCC GCT CCA CAA CAA CGC ATT GTG GCT	1056		
267	Leu Tyr Gly Thr Met Gly Asn Ala Ala Pro Gln Gln Arg Ile Val Ala			
268	340 345 350			
269				
270	CAA CTG GGT CAG GGC GTG TAC CGC ACC CTG TCC TCC ACC CTG TAC CGC	1104		
271	Gln Leu Gly Gln Gly Val Tyr Arg Thr Leu Ser Ser Thr Leu Tyr Arg			
272	355 360 365			
273				
274	CGC CCT TTT AAT ATC GGC ATC AAC AAC CAG CAA CTG TCC GTG CTG GAC	1152		
275	Arg Pro Phe Asn Ile Gly Ile Asn Asn Gln Gln Leu Ser Val Leu Asp			
276	370 375 380			
277				
278	GGC ACC GAA TTT GCT TAC GGC ACC TCC TCC AAT CTG CCA TCC GCT GTA	1200		
279	Gly Thr Glu Phe Ala Tyr Gly Thr Ser Ser Asn Leu Pro Ser Ala Val			
280	385 390 395 400			
281				
282	TAC CGC AAG AGC GGC ACC GTG GAT TCC CTG GAT GAA ATC CCA CCA CAG	1248		
283	Tyr Arg Lys Ser Gly Thr Val Asp Ser Leu Asp Glu Ile Pro Pro Gln			
284	405 410 415			
285				
286	AAT AAC AAC GTG CCA CCT AGG CAA GGC TTT AGC CAT CGC CTG AGC CAT	1296		
287	Asn Asn Asn Val Pro Pro Arg Gln Gly Phe Ser His Arg Leu Ser His			
288	420 425 430			
289				
290	GTG TCC ATG TTT CGC TCC GGC TTT AGC AAT AGC AGC GTG AGC ATC ATC	1344		
291	Val Ser Met Phe Arg Ser Gly Phe Ser Asn Ser Ser Val Ser Ile Ile			
292	435 440 445			
293				
294	CGC GCT CCT ATG TTC TCC TGG ATC CAT CGC AGC GCT GAA TTT AAC AAC	1392		
295	Arg Ala Pro Met Phe Ser Trp Ile His Arg Ser Ala Glu Phe Asn Asn			
296	450 455 460			
297				
298	ATC ATT GCC TCC GAT AGC ATT ACC CAA ATC CCT GCC GTG AAG GGC AAC	1440		
299	Ile Ile Ala Ser Asp Ser Ile Thr Gln Ile Pro Ala Val Lys Gly Asn			
300	465 470 475 480			
301				
302	TTT CTG TTT AAT GGT TCC GTG ATT TCC GGC CCA GGC TTT ACC GGT GGC	1488		
303	Phe Leu Phe Asn Gly Ser Val Ile Ser Gly Pro Gly Phe Thr Gly Gly			
304	485 490 495			
305				
306	GAC CTG GTG CGC CTG AAT AGC AGC GGC AAT AAC ATT CAG AAT CGC GGC	1536		

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:21:36

INPUT SET: S1444.raw

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307  Asp Leu Val  Arg Leu Asn Ser Ser Gly Asn Asn Ile Gln Asn Arg Gly
308                      500                      505                      510
309
310  TAC ATT GAA GTG CCA ATT CAC TTC CCA TCC ACC TCC ACC CGC TAC CGC      1584
311  Tyr Ile Glu Val Pro Ile His Phe Pro Ser Thr Ser Thr Arg Tyr Arg
312                      515                      520                      525
313
314  GTG CGC GTG CGC TAC GCT TCC GTG ACC CCA ATT CAC CTC AAC GTT AAC      1632
315  Val Arg Val Arg Tyr Ala Ser Val Thr Pro Ile His Leu Asn Val Asn
316                      530                      535                      540
317
318  TGG GGC AAT TCC TCC ATT TTT TCC AAT ACC GTG CCA GCT ACC GCT ACC      1680
319  Trp Gly Asn Ser Ser Ile Phe Ser Asn Thr Val Pro Ala Thr Ala Thr
320  545                      550                      555                      560
321
322  TCC CTG GAT AAT CTG CAA TCC AGC GAT TTT GGT TAC TTT GAA AGC GCC      1728
323  Ser Leu Asp Asn Leu Gln Ser Ser Asp Phe Gly Tyr Phe Glu Ser Ala
324                      565                      570                      575
325
326  AAT GCT TTT ACC TCC TCC CTG GGT AAT ATC GTG GGT GTG CGC AAT TTT      1776
327  Asn Ala Phe Thr Ser Ser Leu Gly Asn Ile Val Gly Val Arg Asn Phe
328                      580                      585                      590
329
330  AGC GGC ACC GCC GGC GTG ATC ATC GAC CGC TTT GAA TTT ATT CCA GTG      1824
331  Ser Gly Thr Ala Gly Val Ile Ile Asp Arg Phe Glu Phe Ile Pro Val
332                      595                      600                      605
333
334  ACC GCC ACC CTC GAG TAGGTA      1845
335  Thr Ala Thr Leu Glu
336  610
337
338  (2) INFORMATION FOR SEQ ID NO:11:
339
340      (i) SEQUENCE CHARACTERISTICS:
341          (A) LENGTH: 613 amino acids
342          (B) TYPE: amino acid
343          (D) TOPOLOGY: linear
344
345      (ii) MOLECULE TYPE: protein
346
347      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
348
349  Met Asp Asn Asn Pro Asn Ile Asn Glu Cys Ile Pro Tyr Asn Cys Leu
350      1                      5                      10                      15
351
352  Ser Asn Pro Glu Val Glu Val Leu Gly Gly Glu Arg Ile Glu Thr Gly
353      20                      25                      30
354
355  Tyr Thr Pro Ile Asp Ile Ser Leu Ser Leu Thr Gln Phe Leu Leu Ser
356      35                      40                      45
357

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**INPUT SET: S1444.raw**

358	Glu	Phe	Val	Pro	Gly	Ala	Gly	Phe	Val	Leu	Gly	Leu	Val	Asp	Ile	Ile	
359	50						55					60					
360																	
361	Trp	Gly	Ile	Phe	Gly	Pro	Ser	Gln	Trp	Asp	Ala	Phe	Leu	Val	Gln	Ile	
362	65					70					75					80	
363																	
364	Glu	Gln	Leu	Ile	Asn	Gln	Arg	Ile	Glu	Glu	Phe	Ala	Arg	Asn	Gln	Ala	
365					85					90					95		
366																	
367	Ile	Ser	Arg	Leu	Glu	Gly	Leu	Ser	Asn	Leu	Tyr	Gln	Ile	Tyr	Ala	Glu	
368				100					105					110			
369																	
370	Ser	Phe	Arg	Glu	Trp	Glu	Ala	Asp	Pro	Thr	Asn	Pro	Ala	Leu	Arg	Glu	
371				115				120					125				
372																	
373	Glu	Met	Arg	Ile	Gln	Phe	Asn	Asp	Met	Asn	Ser	Ala	Leu	Thr	Thr	Ala	
374	130					135					140						
375																	
376	Ile	Pro	Leu	Phe	Ala	Val	Gln	Asn	Tyr	Gln	Val	Pro	Leu	Leu	Ser	Val	
377	145					150					155					160	
378																	
379	Tyr	Val	Gln	Ala	Ala	Asn	Leu	His	Leu	Ser	Val	Leu	Arg	Asp	Val	Ser	
380					165					170					175		
381																	
382	Val	Phe	Gly	Gln	Arg	Trp	Gly	Phe	Asp	Ala	Ala	Thr	Ile	Asn	Ser	Arg	
383				180				185					190				
384																	
385	Tyr	Asn	Asp	Leu	Thr	Arg	Leu	Ile	Gly	Asn	Tyr	Thr	Asp	Tyr	Ala	Val	
386				195				200					205				
387																	
388	Arg	Trp	Tyr	Asn	Thr	Gly	Leu	Glu	Arg	Val	Trp	Gly	Pro	Asp	Ser	Arg	
389	210					215					220						
390																	
391	Asp	Trp	Val	Arg	Tyr	Asn	Gln	Phe	Arg	Arg	Glu	Leu	Thr	Leu	Thr	Val	
392	225					230					235					240	
393																	
394	Leu	Asp	Ile	Val	Ala	Leu	Phe	Pro	Asn	Tyr	Asp	Ser	Arg	Arg	Tyr	Pro	
395					245					250					255		
396																	
397	Ile	Arg	Thr	Val	Ser	Gln	Leu	Thr	Arg	Glu	Ile	Tyr	Thr	Asn	Pro	Val	
398				260				265					270				
399																	
400	Leu	Glu	Asn	Phe	Asp	Gly	Ser	Phe	Arg	Gly	Ser	Ala	Gln	Gly	Ile	Glu	
401				275				280					285				
402																	
403	Arg	Ser	Ile	Arg	Ser	Pro	His	Leu	Met	Asp	Ile	Leu	Asn	Ser	Ile	Thr	
404	290					295											

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:21:59

INPUT SET: S1444.raw

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409   Ile Met Ala Ser Pro Val Gly Phe Ser Gly Pro Glu Phe Thr Phe Pro
410                                     325                               330           335
411
412   Leu Tyr Gly Thr Met Gly Asn Ala Ala Pro Gln Gln Arg Ile Val Ala
413                                     340                               345           350
414
415   Gln Leu Gly Gln Gly Val Tyr Arg Thr Leu Ser Ser Thr Leu Tyr Arg
416                                     355                               360           365
417
418   Arg Pro Phe Asn Ile Gly Ile Asn Asn Gln Gln Leu Ser Val Leu Asp
419                                     370                               375           380
420
421   Gly Thr Glu Phe Ala Tyr Gly Thr Ser Ser Asn Leu Pro Ser Ala Val
422   385                                     390                               395           400
423
424   Tyr Arg Lys Ser Gly Thr Val Asp Ser Leu Asp Glu Ile Pro Pro Gln
425                                     405                               410           415
426
427   Asn Asn Asn Val Pro Pro Arg Gln Gly Phe Ser His Arg Leu Ser His
428                                     420                               425           430
429
430   Val Ser Met Phe Arg Ser Gly Phe Ser Asn Ser Ser Val Ser Ile Ile
431                                     435                               440           445
432
433   Arg Ala Pro Met Phe Ser Trp Ile His Arg Ser Ala Glu Phe Asn Asn
434   450                                     455                               460
435
436   Ile Ile Ala Ser Asp Ser Ile Thr Gln Ile Pro Ala Val Lys Gly Asn
437   465                                     470                               475           480
438
439   Phe Leu Phe Asn Gly Ser Val Ile Ser Gly Pro Gly Phe Thr Gly Gly
440                                     485                               490           495
441
442   Asp Leu Val Arg Leu Asn Ser Ser Gly Asn Asn Ile Gln Asn Arg Gly
443                                     500                               505           510
444
445   Tyr Ile Glu Val Pro Ile His Phe Pro Ser Thr Ser Thr Arg Tyr Arg
446   515                                     520                               525
447
448   Val Arg Val Arg Tyr Ala Ser Val Thr Pro Ile His Leu Asn Val Asn
449   530                                     535                               540
450
451   Trp Gly Asn Ser Ser Ile Phe Ser Asn Thr Val Pro Ala Thr Ala Thr
452   545                                     550                               555           560
453
454   Ser Leu Asp Asn Leu Gln Ser Ser Asp Phe Gly Tyr Phe Glu Ser Ala
455   565                                     570                               575
456
457   Asn Ala Phe Thr Ser Ser Leu Gly Asn Ile Val Gly Val Arg Asn Phe
458   580                                     585                               590
459

```

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:22:05

INPUT SET: S1444.raw

460 Ser Gly Thr Ala Gly Val Ile Ile Asp Arg Phe Glu Phe Ile Pro Val  
461 595 600 605

462  
463 Thr Ala Thr Leu Glu  
464 610

465  
466 (2) INFORMATION FOR SEQ ID NO:12:

467  
468 (i) SEQUENCE CHARACTERISTICS:  
469 (A) LENGTH: 1848 base pairs  
470 (B) TYPE: nucleic acid  
471 (C) STRANDEDNESS: single  
472 (D) TOPOLOGY: linear

473  
474 (ii) MOLECULE TYPE: DNA (genomic)

475  
476 (ix) FEATURE:  
477 (A) NAME/KEY: CDS  
478 (B) LOCATION: 1..1842

479  
480 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

481  
482 ATG GAT AAC AAT CCG AAC ATC AAT GAA TGC ATT CCT TAC AAT TGC CTC 48  
483 Met Asp Asn Asn Pro Asn Ile Asn Glu Cys Ile Pro Tyr Asn Cys Leu  
484 1 5 10 15  
485  
486 AGC AAC CCT GAA GTG GAA GTG CTG GGT GGC GAA CGC ATC GAA ACC GGT 96  
487 Ser Asn Pro Glu Val Glu Val Leu Gly Gly Glu Arg Ile Glu Thr Gly  
488 20 25 30  
489  
490 TAC ACC CCA ATC GAT ATT TCC CTG TCC CTG ACC CAA TTT CTG CTG AGC 144  
491 Tyr Thr Pro Ile Asp Ile Ser Leu Ser Leu Thr Gln Phe Leu Leu Ser  
492 35 40 45  
493  
494 GAA TTT GTG CCC GGT GCT GGC TTT GTG CTG GGC CTG GTG GAT ATC ATC 192  
495 Glu Phe Val Pro Gly Ala Gly Phe Val Leu Gly Leu Val Asp Ile Ile  
496 50 55 60  
497  
498 TGG GGC ATT TTT GGT CCC TCC CAA TGG GAC GCC TTT CTG GTG CAA ATT 240  
499 Trp Gly Ile Phe Gly Pro Ser Gln Trp Asp Ala Phe Leu Val Gln Ile  
500 65 70 75 80  
501  
502 GAA CAG CTG ATT AAC CAA CGC ATC GAA GAA TTC GCT AGG AAC CAA GCC 288  
503 Glu Gln Leu Ile Asn Gln Arg Ile Glu Glu Phe Ala Arg Asn Gln Ala  
504 85 90 95  
505  
506 ATT TCC CGC CTG GAA GGC CTG AGC AAT CTG TAC CAA ATT TAC GCC GAA 336  
507 Ile Ser Arg Leu Glu Gly Leu Ser Asn Leu Tyr Gln Ile Tyr Ala Glu  
508 100 105 110  
509  
510 TCC TTT CGC GAG TGG GAA GCC GAT CCT ACC AAT CCA GCC CTG CGC GAA 384

DATE: 09/07/93  
TIME: 15:22:12

**INPUT SET: S1444.raw**

511	Ser	Phe	Arg	Glu	Trp	Glu	Ala	Asp	Pro	Thr	Asn	Pro	Ala	Leu	Arg	Glu	
512			115					120					125				
513																	
514	GAG	ATG	CGC	ATT	CAA	TTC	AAT	GAC	ATG	AAC	AGC	GCC	CTG	ACC	ACC	GCT	432
515	Glu	Met	Arg	Ile	Gln	Phe	Asn	Asp	Met	Asn	Ser	Ala	Leu	Thr	Thr	Ala	
516		130					135					140					
517																	
518	ATT	CCT	CTG	TTT	GCC	GTG	CAA	AAT	TAC	CAA	GTG	CCT	CTG	CTG	TCC	GTG	480
519	Ile	Pro	Leu	Phe	Ala	Val	Gln	Asn	Tyr	Gln	Val	Pro	Leu	Leu	Ser	Val	
520		145				150					155					160	
521																	
522	TAC	GTG	CAA	GCT	GCC	AAT	CTG	CAT	CTG	TCC	GTG	CTG	CGC	GAT	GTG	TCC	528
523	Tyr	Val	Gln	Ala	Ala	Asn	Leu	His	Leu	Ser	Val	Leu	Arg	Asp	Val	Ser	
524					165					170					175		
525																	
526	GTG	TTT	GGC	CAA	AGG	TGG	GGC	TTT	GAT	GCC	GCC	ACC	ATC	AAT	AGC	CGC	576
527	Val	Phe	Gly	Gln	Arg	Trp	Gly	Phe	Asp	Ala	Ala	Thr	Ile	Asn	Ser	Arg	
528				180					185					190			
529																	
530	TAC	AAT	GAT	CTG	ACC	AGG	CTG	ATT	GGC	AAC	TAC	ACC	GAT	TAC	GCT	GTG	624
531	Tyr	Asn	Asp	Leu	Thr	Arg	Leu	Ile	Gly	Asn	Tyr	Thr	Asp	Tyr	Ala	Val	
532			195					200					205				
533																	
534	CGC	TGG	TAC	AAT	ACC	GGC	CTG	GAA	CGC	GTG	TGG	GGC	CCA	GAT	TCC	CGC	672
535	Arg	Trp	Tyr	Asn	Thr	Gly	Leu	Glu	Arg	Val	Trp	Gly	Pro	Asp	Ser	Arg	
536		210					215					220					
537																	
538	GAT	TGG	GTG	AGG	TAC	AAT	CAA	TTT	CGC	CGC	GAA	CTG	ACC	CTG	ACC	GTG	720
539	Asp	Trp	Val	Arg	Tyr	Asn	Gln	Phe	Arg	Arg	Glu	Leu	Thr	Leu	Thr	Val	
540		225				230					235					240	
541																	
542	CTC	GAT	ATC	GTG	GCT	CTG	TTC	CCA	AAT	TAC	GAT	AGC	CGC	CGC	TAC	CCA	768
543	Leu	Asp	Ile	Val	Ala	Leu	Phe	Pro	Asn	Tyr	Asp	Ser	Arg	Arg	Tyr	Pro	
544					245					250					255		
545																	
546	ATT	CGA	ACC	GTG	TCC	CAA	CTG	ACC	CGC	GAA	ATT	TAC	ACC	AAC	CCA	GTG	816
547	Ile	Arg	Thr	Val	Ser	Gln	Leu	Thr	Arg	Glu	Ile	Tyr	Thr	Asn	Pro	Val	
548				260					265					270			
549																	
550	CTG	GAA	AAT	TTT	GAT	GGT	AGC	TTT	CGC	GGC	TCC	GCT					

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:22:19

INPUT SET: S1444.raw

562	ATC ATG GCT TCC CCT GTG GGC TTT TCC GGG CCA GAA TTC ACC TTT CCA	1008
563	Ile Met Ala Ser Pro Val Gly Phe Ser Gly Pro Glu Phe Thr Phe Pro	
564	325 330 335	
565		
566	CTG TAC GGC ACG ATG GGC AAT GCC GCT CCA CAA CAA CGC ATT GTG GCT	1056
567	Leu Tyr Gly Thr Met Gly Asn Ala Ala Pro Gln Gln Arg Ile Val Ala	
568	340 345 350	
569		
570	CAA CTG GGT CAG GGC GTG TAC CGC ACC CTG TCC TCC ACC CTG TAC CGC	1104
571	Gln Leu Gly Gln Gly Val Tyr Arg Thr Leu Ser Ser Thr Leu Tyr Arg	
572	355 360 365	
573		
574	CGC CCT TTT AAT ATC GGC ATC AAC AAC CAG CAA CTG TCC GTG CTG GAC	1152
575	Arg Pro Phe Asn Ile Gly Ile Asn Asn Gln Gln Leu Ser Val Leu Asp	
576	370 375 380	
577		
578	GGC ACC GAA TTT GCT TAC GGC ACC TCC TCC AAT CTG CCA TCC GCT GTA	1200
579	Gly Thr Glu Phe Ala Tyr Gly Thr Ser Ser Asn Leu Pro Ser Ala Val	
580	385 390 395 400	
581		
582	TAC CGC AAG AGC GGC ACC GTG GAT TCC CTG GAT GAA ATC CCA CCA CAG	1248
583	Tyr Arg Lys Ser Gly Thr Val Asp Ser Leu Asp Glu Ile Pro Pro Gln	
584	405 410 415	
585		
586	AAT AAC AAC GTG CCA CCT AGG CAA GGC TTT AGC CAT CGC CTG AGC CAT	1296
587	Asn Asn Asn Val Pro Pro Arg Gln Gly Phe Ser His Arg Leu Ser His	
588	420 425 430	
589		
590	GTG TCC ATG TTT CGC TCC GGC TTT AGC AAT AGC AGC GTG AGC ATC ATC	1344
591	Val Ser Met Phe Arg Ser Gly Phe Ser Asn Ser Ser Val Ser Ile Ile	
592	435 440 445	
593		
594	CGC GCT CCT ATG TTC TCC TGG ATC CAC CGC TCC GCT GAG TTC AAC AAC	1392
595	Arg Ala Pro Met Phe Ser Trp Ile His Arg Ser Ala Glu Phe Asn Asn	
596	450 455 460	
597		
598	ATC ATC CCG TCC TCC CAA ATC ACC CAA ATC CCG CTC ACC AAG TCC ACG	1440
599	Ile Ile Pro Ser Ser Gln Ile Thr Gln Ile Pro Leu Thr Lys Ser Thr	
600	465 470 475 480	
601		
602	AAC CTC GGC TCC GGC ACG TCC GTC GTC AAG GGC CCG GGC TTC ACC GGC	1488
603	Asn Leu Gly Ser Gly Thr Ser Val Val Lys Gly Pro Gly Phe Thr Gly	
604	485 490 495	
605		
606	GGC GAC ATC CTC CGC CGC ACG TCC CCG GGC CAG ATC TCC ACC CTC CGC	1536
607	Gly Asp Ile Leu Arg Arg Thr Ser Pro Gly Gln Ile Ser Thr Leu Arg	
608	500 505 510	
609		
610	GTC AAC ATC ACG GCT CCG CTG AGC CAG CGC TAC AGG GTG CGC ATC AGA	1584
611	Val Asn Ile Thr Ala Pro Leu Ser Gln Arg Tyr Arg Val Arg Ile Arg	
612	515 520 525	

# RAW SEQUENCE LISTING PATENT APPLICATION US/08/113,561

DATE: 09/07/93  
TIME: 15:22:26

INPUT SET: S1444.raw

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613
614   TAC GCT AGC ACG ACC AAC CTG CAA TTC CAC ACG TCC ATC GAC GGC AGA      1632
615   Tyr Ala Ser Thr Thr Asn Leu Gln Phe His Thr Ser Ile Asp Gly Arg
616       530                      535                      540
617
618   CCG ATC AAC CAG GGC AAC TTC AGC GCG ACG ATG AGC TCC GGG TCC AAC      1680
619   Pro Ile Asn Gln Gly Asn Phe Ser Ala Thr Met Ser Ser Gly Ser Asn
620   545                      550                      555                      560
621
622   CTC CAG TCC GGC TCC TTC CGC ACG GTC GGT TTC ACC ACG CCG TTC AAC      1728
623   Leu Gln Ser Gly Ser Phe Arg Thr Val Gly Phe Thr Thr Pro Phe Asn
624       565                      570                      575
625
626   TTC TCC AAC GGC TCC TCC GTC TTC ACG CTC TCC GCT CAC GTC TTC AAC      1776
627   Phe Ser Asn Gly Ser Ser Val Phe Thr Leu Ser Ala His Val Phe Asn
628       580                      585                      590
629
630   TCC GGC AAC GAG GTG TAC ATC GAC CGC ATC GAG TTC GTC CCG GCC GAG      1824
631   Ser Gly Asn Glu Val Tyr Ile Asp Arg Ile Glu Phe Val Pro Ala Glu
632       595                      600                      605
633
634   GTC ACC TTC GAG CTC GAG TAGGTA      1848
635   Val Thr Phe Glu Leu Glu
636       610
637
638
639   (2) INFORMATION FOR SEQ ID NO:13:
640
641       (i) SEQUENCE CHARACTERISTICS:
642           (A) LENGTH: 614 amino acids
643           (B) TYPE: amino acid
644           (D) TOPOLOGY: linear
645
646       (ii) MOLECULE TYPE: protein
647
648       (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:
649
650   Met Asp Asn Asn Pro Asn Ile Asn Glu Cys Ile Pro Tyr Asn Cys Leu
651       1           5           10           15
652
653   Ser Asn Pro Glu Val Glu Val Leu Gly Gly Glu Arg Ile Glu Thr Gly
654       20           25           30
655
656   Tyr Thr Pro Ile Asp Ile Ser Leu Ser Leu Thr Gln Phe Leu Leu Ser
657       35           40           45
658
659   Glu Phe Val Pro Gly Ala Gly Phe Val Leu Gly Leu Val Asp Ile Ile
660       50           55           60
661
662   Trp Gly Ile Phe Gly Pro Ser Gln Trp Asp Ala Phe Leu Val Gln Ile
663       65           70           75           80

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DATE: 09/07/93  
TIME: 15:22:33

**INPUT SET: S1444.raw**

664		Glu	Gln	Leu	Ile	Asn	Gln	Arg	Ile	Glu	Glu	Phe	Ala	Arg	Asn	Gln	Ala
665						85					90					95	
666																	
667																	
668	Ile	Ser	Arg	Leu	Glu	Gly	Leu	Ser	Asn	Leu	Tyr	Gln	Ile	Tyr	Ala	Glu	
669				100					105					110			
670																	
671	Ser	Phe	Arg	Glu	Trp	Glu	Ala	Asp	Pro	Thr	Asn	Pro	Ala	Leu	Arg	Glu	
672			115					120					125				
673																	
674	Glu	Met	Arg	Ile	Gln	Phe	Asn	Asp	Met	Asn	Ser	Ala	Leu	Thr	Thr	Ala	
675		130					135					140					
676																	
677	Ile	Pro	Leu	Phe	Ala	Val	Gln	Asn	Tyr	Gln	Val	Pro	Leu	Leu	Ser	Val	
678	145					150					155					160	
679																	
680	Tyr	Val	Gln	Ala	Ala	Asn	Leu	His	Leu	Ser	Val	Leu	Arg	Asp	Val	Ser	
681					165					170					175		
682																	
683	Val	Phe	Gly	Gln	Arg	Trp	Gly	Phe	Asp	Ala	Ala	Thr	Ile	Asn	Ser	Arg	
684				180					185					190			
685																	
686	Tyr	Asn	Asp	Leu	Thr	Arg	Leu	Ile	Gly	Asn	Tyr	Thr	Asp	Tyr	Ala	Val	
687			195					200					205				
688																	
689	Arg	Trp	Tyr	Asn	Thr	Gly	Leu	Glu	Arg	Val	Trp	Gly	Pro	Asp	Ser	Arg	
690		210					215					220					
691																	
692	Asp	Trp	Val	Arg	Tyr	Asn	Gln	Phe	Arg	Arg	Glu	Leu	Thr	Leu	Thr	Val	
693	225					230					235					240	
694																	
695	Leu	Asp	Ile	Val	Ala	Leu	Phe	Pro	Asn	Tyr	Asp	Ser	Arg	Arg	Tyr	Pro	
696					245					250					255		
697																	
698	Ile	Arg	Thr	Val	Ser	Gln	Leu	Thr	Arg	Glu	Ile	Tyr	Thr	Asn	Pro	Val	
699				260					265					270			
700																	
701	Leu	Glu	Asn	Phe	Asp	Gly	Ser	Phe	Arg	Gly	Ser	Ala	Gln	Gly	Ile	Glu	
702			275					280					285				
703																	
704	Arg	Ser	Ile	Arg	Ser	Pro	His	Leu	Met	Asp	Ile	Leu	Asn	Ser	Ile	Thr	
705		290					295					300					</

# RAW SEQUENCE LISTING PATENT APPLICATION *US/08/113,561*

DATE: 09/07/93  
TIME: 15:22:39

*INPUT SET: S1444.raw*

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715
716   Gln Leu Gly Gln Gly Val Tyr Arg Thr Leu Ser Ser Thr Leu Tyr Arg
717           355                      360                      365
718
719   Arg Pro Phe Asn Ile Gly Ile Asn Asn Gln Gln Leu Ser Val Leu Asp
720           370                      375                      380
721
722   Gly Thr Glu Phe Ala Tyr Gly Thr Ser Ser Asn Leu Pro Ser Ala Val
723   385                      390                      395                      400
724
725   Tyr Arg Lys Ser Gly Thr Val Asp Ser Leu Asp Glu Ile Pro Pro Gln
726           405                      410                      415
727
728   Asn Asn Asn Val Pro Pro Arg Gln Gly Phe Ser His Arg Leu Ser His
729           420                      425                      430
730
731   Val Ser Met Phe Arg Ser Gly Phe Ser Asn Ser Ser Val Ser Ile Ile
732           435                      440                      445
733
734   Arg Ala Pro Met Phe Ser Trp Ile His Arg Ser Ala Glu Phe Asn Asn
735           450                      455                      460
736
737   Ile Ile Pro Ser Ser Gln Ile Thr Gln Ile Pro Leu Thr Lys Ser Thr
738   465                      470                      475                      480
739
740   Asn Leu Gly Ser Gly Thr Ser Val Val Lys Gly Pro Gly Phe Thr Gly
741           485                      490                      495
742
743   Gly Asp Ile Leu Arg Arg Thr Ser Pro Gly Gln Ile Ser Thr Leu Arg
744           500                      505                      510
745
746   Val Asn Ile Thr Ala Pro Leu Ser Gln Arg Tyr Arg Val Arg Ile Arg
747           515                      520                      525
748
749   Tyr Ala Ser Thr Thr Asn Leu Gln Phe His Thr Ser Ile Asp Gly Arg
750           530                      535                      540
751
752   Pro Ile Asn Gln Gly Asn Phe Ser Ala Thr Met Ser Ser Gly Ser Asn
753   545                      550                      555                      560
754
755   Leu Gln Ser Gly Ser Phe Arg Thr Val Gly Phe Thr Thr Pro Phe Asn
756           565                      570                      575
757
758   Phe Ser Asn Gly Ser Ser Val Phe Thr Leu Ser Ala His Val Phe Asn
759           580                      585                      590
760
761   Ser Gly Asn Glu Val Tyr Ile Asp Arg Ile Glu Phe Val Pro Ala Glu
762           595                      600                      605
763
764   Val Thr Phe Glu Leu Glu
765           610

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**RAW SEQUENCE LISTING**  
**PATENT APPLICATION *US/08/113,561***

DATE: 09/07/93  
TIME: 15:22:46

***INPUT SET: S1444.raw***

766

767

PAGE: 1

**SEQUENCE VERIFICATION REPORT**  
**PATENT APPLICATION US/08/113,561**

DATE: 09/07/93  
TIME: 15:22:46

*INPUT SET: S1444.raw*

Line	Error	Original Text
28	Wrong application Serial Number	(A) APPLICATION NUMBER: unknown
29	Wrong Filing Date	(B) FILING DATE: August 25, 1993
30	Wrong Classification	(C) CLASSIFICATION: unknown

PAGE: 1

**SEQUENCE MISSING ITEM REPORT**  
**PATENT APPLICATION *US/08/113,561***

DATE: 09/07/93  
TIME: 15:22:47

*INPUT SET: S1444.raw*

APPLICATION NUMBER  
FILING DATE  
PRIOR APPLICATION DATA

PAGE: 1

**SEQUENCE CORRECTION REPORT**  
**PATENT APPLICATION US/08/113,561**

DATE: 09/07/93  
TIME: 15:22:47

*INPUT SET: S1444.raw*

Line	Original Text	Corrected Text
5	(i) APPLICANTS: Adams, Thomas R. et al.	(i) APPLICANT: Adams, Thomas R. et al.